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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,728	02/26/2002	John Erik Hershey	RD-27,856	4694

6147 7590 05/31/2005

GENERAL ELECTRIC COMPANY  
GLOBAL RESEARCH  
PATENT DOCKET RM. BLDG. K1-4A59  
NISKAYUNA, NY 12309

EXAMINER
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GHULAMALI, QUTBUDDIN

ART UNIT	PAPER NUMBER
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2637

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/082,728		HERSHEY ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Qutub Ghulamali		2637	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 February 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/26/02</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-21, 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Richards et al (US Pub. 2002/0061081).

Regarding claim 1, Richard discloses a distributed receiver system for communicating transmitted reference ultra wideband communications signals comprising:

a receiver front end (fig. 16, element 1504) receiving transmitted ultra wideband signals, downconverter comprising a correlators (1627a-d) for producing ultra wideband pulses from the transmitted reference ultra wideband communications signals (fig. 16 element 1504; col. 1, section 0367);

a digitizers connected to the receiver front end downconverter for receiving and digitizing the ultra wideband pulses (col. 1, section 0786);

a high bandwidth cable connected to the digitizer for receiving the digitized ultra wideband pulses (col. 1, section 0789; and

a centralized digital processing module (4245-fig. 3, element 303) connected to the high bandwidth cable for interpreting the digitized ultra wideband pulses (col. 1, sections 0789, 0791).

Regarding claims 2 and 15, Richards discloses an antenna connected to the receiver front-end downconverter for receiving signals (col. 1, section 1770).

As per claims 3 and 16, Richards discloses an antenna (fig. 16, element 1502), which can be placed as desired such as on top of the ceiling or between a ceiling and a drop ceiling.

Regarding claim 4, Richards discloses 4 front-end downconverter further comprises preamplifiers (1622a-d) connected to the antenna (460) and the correlators (1627a-d) for amplifying the received transmitted reference ultra wideband communications signals (col. 2, section 0370).

Regarding claim 5, Richards discloses correlator comprises a delay (2520) element connected to the preamplifier for delaying the transmitted reference ultra wideband communications signals and a mixing element connected to the preamplifier and the delay element for mixing the delayed transmitted reference ultra wideband communication signals with the transmitted reference ultra wideband communications signals (fig. 25, col. 1, section 0487).

Regarding claim 6, Richards discloses (fig. 16) receiver comprises a filter for filtering the correlated signals (col. 2, section 0030).

Regarding claim 7, Richards discloses a modem connected between the digitizer and the high bandwidth cable for supplying the digitized ultra wideband pulses to the high bandwidth cable (col. 2, section 0789).

As per claim 8, Richards discloses an analog to digital device for digitally converting the ultra wideband pulses (figs. 15, 16; col. 2, sections 0369, 0371) and

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a clock connected to the analog to digital device and the modem for synchronizing operations on the ultra wideband pulses (col. 2, sections 0369, 0371).

Regarding claims 9 and 17, Richards discloses, a sampler connected to the receiver front end downconverter and the clock for sampling the ultra wideband pulses (figs. 23, 24) (col. 2, section 0371); a quantizer connected to the sampler and the clock for quantizing the samples of the ultra wideband pulses into a predetermined number of quantizer levels (col. 2, sections 0371, 0372); and an encoder (2354) connected to the quantizer and the clock for encoding the quantized samples of the ultra wideband pulses (col. 1, section 0442).

Regarding claims 10, 11, 18 and 19, Richards discloses high bandwidth signal interface may comprise a coaxial cable, or a fiber optical cable for communication (col. 2, section 0789)

Regarding claims 12 and 20, Richards discloses signal processing module include plurality of decoders (col. 2, sections 0395, 0397).

Regarding claims 13 and 21, Richards discloses processor comprises a field programmable gate array (col. 1, section 0257).

Regarding claim 14 Richards discloses a distributed receiver system for communicating transmitted reference ultra wideband communications signals comprising:

a receiver front end downconverter comprising a correlator for producing ultra wideband pulses from the transmitted reference ultra wideband communications signals (4245- col. 1, section 0064), (1081- fig. 16 element 1504);

a plurality of digitizers connected to the receiver front end downconverter for receiving and digitizing the ultra wideband pulses, each of said plurality of digitizers comprising:

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an analog to digital device connected to the receiver front end  
downconverter for digitally converting the ultra wideband pulses (cols. 2 and 1, section 0472);  
and a clock connected to the analog to digital device for synchronizing operations on the ultra wideband pulses (col. 2, sections 0369, 0371);  
a modem connected to each of the plurality of digitizers and the clock for communicating the digitized ultra wideband pulses (col. 2, section 0789);  
a high bandwidth cable connected to the modem for receiving the digitized ultra wideband pulses (col. 2, section 0789); and  
a centralized digital processing module connected to the high bandwidth cable for interpreting the digitized ultra wideband pulses (col. 1, sections 0789, 0791).

Regarding claim 25, Richards discloses:

receiving the transmitted reference ultra wideband communications signals using an antenna (figs. 15, 16 elements 1502, 1504);  
downconverting the transmitted reference ultra wideband communications signals into ultra wideband pulses (fig. 16 element 1504; col. 1, section 0367);  
sampling the ultra wideband pulses (figs. 23, 24) (col. 2, section 0371);  
quantizing the ultra wideband pulses into a predetermined number of quantizer levels (col. 2, sections 0371, 0372);  
encoding (2354) the ultra wideband pulses (col. 1, section 0442);  
providing the ultra wideband pulses to a centralized digital processor (col. 1, section 0442);

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processing the ultra wideband pulses using a logic tree to determine information content contained the transmitted reference ultra wideband communications signals (col. 1, section 0257); and

identifying a particular one of said at least one ultra wideband transmitter from the step of processing (cols. 1 and 2, section 0257).

3. Claims 22-24 are rejected under 35 U.S.C. 102(e) as being anticipated by McCorkle et al (US Pub. 2002/0064245).

Regarding claims 22, 23 and 24, McCorkle discloses a distributed receiver system for communicating transmitted reference ultra wideband communications signals comprising: a receiver front end (4245-element 315) receiving transmitted ultra wideband signals, downconverter comprising a correlator (320) for producing ultra wideband pulses from the transmitted reference ultra wideband communications signals (4245-col. 1, section 0064); a digitizers connected to the receiver front end downconverter for receiving and digitizing the ultra wideband pulses (col. 1, section 0109); a high bandwidth cable connected to the digitizer for receiving the digitized ultra wideband pulses (col. 2, section 0175); and a centralized digital processing module (4245-fig. 3, element 303) connected to the high bandwidth cable for interpreting the digitized ultra wideband pulses (4245- col. 1, section 0065).

*Conclusion*

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patents:

Terlep et al (USP 5,796,777) discloses an Apparatus and method for digitizing and detecting a received radio frequency signal.

Lemson (USP 5,678,198) shows system for controlling signal level at both transmitter and receiver.

Kotzin et al (USP 5,392,044) discloses a Method and apparatus for digitizing a wide frequency bandwidth signal.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014.

The examiner can normally be reached on Monday-Friday from 8:00AM - 5:00PM.

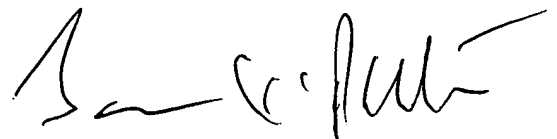
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QG.  
May 25, 2005.

A handwritten signature in black ink, appearing to read 'Jay K. Patel', with a stylized, flowing script.

**JAY K. PATEL**  
**SUPERVISORY PATENT EXAMINER**